



Server Consolidation

Action Required

Recommendations: (1) Accept the report on server consolidation, (2) refer the report to the Enterprise Leadership Council, along with suggestions for next steps, (3) direct the Department of Technology Services (DTS) to identify strategies to accommodate server consolidation workload, and (4) direct DTS to develop standard criteria for State CIO use in evaluating departmental computer rooms for security and continuity of operations purposes.

Introduction

In March 2006, the Technology Services Board (TSB) directed the Department of Technology Services (DTS) to engage an independent consultant to: (1) inventory existing servers in departments, (2) estimate future server growth, (3) determine the cost and value of consolidating servers, (4) identify consolidation risks, and (5) identify the types of consolidation that would be appropriate for the State of California. This document provides a brief overview of the completed study and some recommended actions that the TSB may wish to consider in moving forward with server consolidation.

Server Consolidation Study

In December 2006, DTS contracted with Intel Solution Services to conduct the server consolidation study. As a result, Intel created an inventory of state servers, collected information from departments through online questionnaires and interviews, and conducted best practices research. Overall, the study focused on the departments under the direct control of the Governor; however, all state departments were invited to participate in order to maximize the benefits. A total of 40 departments actively participated, which resulted in an inventory of over 6,000 servers. For an overview of the report, please see the attached Executive Summary (Appendix A). To access the full report, visit http://www.dts.ca.gov/tsb/pdf/server_consolidation_study_062907.pdf.

The final report includes five major recommendations that identify opportunities for savings and improved management over servers within state government. Those recommendations are as follows:

- **Utilization of Data Centers** - No significant addition or expansion should be made to existing departmental computer room facilities. Current computer room facilities should be evaluated to determine if they meet minimum requirements for



security and continuity of operations commensurate with the applications and server functions they support.

- **In Department Consolidation** - The State CIO should set a goal to eliminate 15% of existing servers through combining workloads and services over the next three years. Departments should evaluate opportunities to combine workloads into one system server, and determine suitability for virtualization, which is a method to combine separate automated systems onto one piece of hardware.
- **File Sharing and Document Management** - Departments should consolidate servers that primarily support files and evaluate opportunities to reduce or eliminate requirements for management – especially backup – of dispersed file servers. Departments should evaluate opportunities for department-wide management of server content as a long term option.
- **Email** - A plan should be developed to convert all departments to a common statewide email system over a three-year period.
- **Virtualization** - The State CIO should set a goal to convert 20% of the existing servers to virtual machines over a three-year period.

As described above, most of the report's recommendations relate to consolidation opportunities within departments. Since the TSB's authority relates to DTS, the TSB is somewhat limited in the type of follow-up actions that it can take on the report's recommendations. However, the Enterprise Leadership Council (ELC), which was established as a forum for statewide information technology initiatives or statewide enterprise projects, may be able to take further actions, such as examining short-term implementation strategies for server consolidation in the State.

Recommended Next Steps for the TSB

Although the TSB is somewhat limited in its ability to take further actions on server consolidation, we believe that there are some steps that the TSB may wish to consider in continuing its support of server consolidation in the State. These steps are described as follows:

1. Accept the consultant's report as the completion of the March 2006 TSB Action Item for DTS.
2. Refer the report to the ELC in order to:
 - Examine which server consolidation activities could be accomplished in the next two to three years



- Determine the value those activities would bring to the State
 - Determine how the State could best accomplish those activities
3. Direct DTS to identify strategies to: (1) accommodate a statewide server consolidation workload, and (2) report on its capacity and readiness to accept that workload.
 4. Direct DTS to develop standard criteria for the State CIO to use in evaluating departmental computer rooms to ensure minimum requirements for security and continuity of operations commensurate with the applications and server functions that they support.



Agenda 3B
Appendix A